

The Missouri River Report

THE OFFICIAL PUBLICATION OF THE MISSOURI RIVER BASIN ASSOCIATION

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Master Manual activities

Thanks to Dave Barfield (Kansas Department of Agriculture) and Todd Sando (North Dakota State Water Commission) for contributing information for this article.

Since submitting its recommendations regarding water management policy to the U.S. Army Corps of Engineers last November (*see related story*), the Missouri River Basin Association (MRBA) has continued working to help residents of the basin reach consensus on issues that have divided them for many years.

In turn, the Corps recently published a fact sheet summarizing key points of the North-western Division's preferred alternative for the Master Manual. The full text of the Corps' Revised Draft Environmental Impact Statement (RDEIS) will be published in March or April, followed by a six-month public comment period. The Corps will be hosting a series of public workshops and public hearings throughout the Missouri and Mississippi river basins. (*See related story.*)

MRBA compiled its document after almost five years of

consultation with numerous constituents throughout the basin. To involve a wide variety of interest groups in the discussion, MRBA hosted three conferences over the course of three years. People from throughout the basin attended those meetings and voiced their concerns and suggestions in a cooperative atmosphere. MRBA also gathered input through public participation at its board meetings, though telephone conversations with constituents, and other means. Throughout the process, MRBA maintained contact with approximately 150 constituents of the basin, including representatives of interest groups, Indian tribes, and government agencies.

MRBA had launched the consensus-building process at the request of the Corps after the public expressed disapproval of an earlier proposal to revise the Master Manual.

"One of the things we realized early was the need to involve the public to a much

greater degree," said Richard Opper, executive director of MRBA.

Because the many residents of the basin have conflicting needs, he explained, the MRBA plan does not give everyone exactly what they wanted. However, MRBA and the Corps considered all opinions and tried to avoid causing undue hardship for any single group of people.

"The association dealt with complex issues. There must be a certain amount of pain-sharing because we're talking about changes that affect people's lives. It's a very difficult task we faced," Opper noted.

"All of us realized going into this that if we were able to come to agreement on a new plan, that it wouldn't be the exact plan that—say—the state of Iowa, the state of North Dakota, or any one interest group would pick for itself. We realized that we needed to compromise. Our goal in this whole process was to develop something that everyone

could agree with, not necessarily a plan that any participating state or interest group would come up with on its own. We did our best to ensure that there was minimal disruption to any particular economic use of the river while still working to recover the basin's threatened and endangered species."

For example, he said, one advantage of MRBA's plan is that it minimizes the probability that navigation would be supported at only minimum service levels for several consecutive years during a severe drought. Any drought is bound to reduce the amount of water available for navigation and other uses, he noted, no matter what plan is being used to manage the river system.

According to the Corps' calculations, the MRBA plan would reduce overall navigation economics on the Missouri by only 1 percent. In contrast, plans that have been suggested by other organizations would reduce navigation economics by 4 percent to 32 percent. Recreation benefits under the MRBA recommendations would increase 4%, largely because of a less precipitous drop in reservoir levels during drought.

In addition to economic considerations, one of the key goals of the Master Manual revision is to improve conditions for the basin's fish and wildlife, particularly threatened and endangered species

"MRBA's recommendations focus on habitat restoration,"

Opper said. "We need more habitat for fish and wildlife. That is an essential ingredient for the recovery of threatened and endangered species and to prevent future listings of threatened and endangered species.

"The Fish and Wildlife Service has the responsibility to make the final decision about whether this plan sufficiently addresses endangered species. That's one of the reasons why we're insisting on a monitoring program to document the success of efforts to recover species at risk." Some of these efforts include spillway releases from Fort Peck Reservoir and flow criteria on the lower river to benefit fish and wildlife. "We believe that both environmental benefits and economic uses of the river can co-exist with a certain degree of mitigation," he said.

Proposals that offered one particular environmental benefit, a yearly period of high water called the "spring rise," were not recommended by MRBA because they would cause too much hardship for people in the basin.

Opper noted, "A spring rise comes at an economic cost. It does hurt farming in the floodplain. It does lessen the degree of flood control in the system. It certainly hurts navigation, because you've got to cut back on releases at some other time, which might well be during navigation months. It comes at a potential cost to the reservoir sports fisheries, and dollar-wise it comes at a huge expense to hydropower users.

"MRBA didn't feel like what we thought would be minimal benefits from a spring rise downstream were worth the potential cost. That's why MRBA decided to put its efforts instead behind habitat restoration activities that will provide a much bigger bang for the buck at far less cost to the existing uses of the river system."

Similarly, MRBA did not support a proposal to release water into the river during a drought to support navigation for two short periods each year instead of one long period. "Nowhere in our recommendations did we support a split season. A split season comes at a cost that we didn't feel was worth imposing on the basin," Opper explained. "And a split season stores water that under normal conditions will have to be released sometime during the year, most likely in the spring. So it results in the spring rise we had hoped to avoid at this point."

There has been some confusion, he said, regarding water that the MRBA recommends holding in the upper basin reservoirs during droughts. Compared to the current Master Manual, this strategy would conserve an additional 2.6 MAF of water in the reservoirs during a drought similar to the one that occurred in the late 1980s. This water would be available to support navigation and other uses as the drought continues. This is not, as some have suggested, a transfer of 2 to 3 MAF of water to the upper basin, but rather storage of

water for various uses throughout the basin in times of greater need.

The “system storage triggers” (criteria that dictate when and to what degree measures affecting water releases from the reservoirs should be taken) were negotiated by the states throughout most of 1999 before being recommended by MRBA and included in the Corps Northwestern Division’s Preferred Alternative. The triggers and their effects are complicated, but a goal of the process was to reach a compromise between the upper and lower basin states. MRBA focused on what the minimum storage level would be in a drought like the one that occurred in the late 1980s.

MRBA’s compromise recommendation—storing 43 MAF of water in the river system during a drought as severe as the one of the 1980s—was not what states in either the upper or lower basin preferred. Although the MRBA recommendation is not as favorable to river commerce as some would like, the Corps modeling indicates it will continue to provide the navigation industry with most of the economic benefits that are provided under the current Master Manual. The MRBA criteria are much more supportive of river commerce than those included in the Draft EIS Preferred Alternative the Corps released in 1995.

Even though MRBA’s proposed system storage triggers hold more water in the reservoirs during drought, they do provide

important benefits to navigators. While developing the storage triggers, MRBA worked closely with people who operate navigation businesses on the Missouri. They said that their costs increase substantially in years of minimum service level and that they did not believe the industry could take consecutive years in which only minimal navigation service was provided. They also said they would be willing to accept a shortened navigation season sooner in a drought, if river flows could be kept at or above intermediate levels.

To accomplish this, the MRBA recommendations cut season lengths from 8 months to 7.1 months much more quickly than do the existing criteria. This was several days less than the 7.25 month season the navigation industry indicated it needed. However, the recommendations do a better job than the current Master Manual at avoiding consecutive years of minimum navigation service level flows. It is likely that the Corps, in its Annual Operating Plan process, will leave room for the navigation industry to help decide whether the season should be shortened in the spring, fall, or some combination of months.

In considering how best to manage the Missouri, the Corps considered data that had been compiled during a century of constantly changing weather (including devastating floods and droughts such as the Dust Bowl catastrophe), data that reflect current economic conditions, and

data that relate to environmental concerns. The model used to test the plans considered the daily flow that was recorded at various points along the river each day for the past 100 years.

The Corps used the data to run hundreds of computer simulations to examine a broad range of variables. Some of the alternatives were intended to produce specific results, such as improving the environment, holding more water in the reservoirs than the current management plan, and anticipating depletions of water that might occur in the future. In the end, as MRBA defined the parameters of a compromise, the Corps ran simulations of numerous middle-ground alternatives to find the one that best addressed the concerns of both upstream and downstream basin residents.

To help prevent bias, the basin’s states and tribes, along with interest groups such as the navigation and recreation industries, were involved in the review of the data. As the review progressed, the Corps worked to address any concerns raised by participants, and it ran alternative computer simulations at the request of MRBA, the navigators, American Rivers, and other groups.

Using historic data, the Corps was able to simulate operations over a 100-year period. The Corps calculated an average economic and environmental value to show the cumulative effect of each of its proposed alternatives. In addition, annual values for each alternative were figured so that interest groups

could see how various uses of the river would be affected by that plan during any given year. Since a century is a significant period of time, these models included data from three major droughts, other shorter droughts, and years with high runoff and flooding.

To fine-tune its water management for the actual conditions in any future year, the Corps will continue to write an Annual Operating Plan (AOP), as the agency has done under the current Master Manual. This process is an avenue for interest groups to be included in the management of the Missouri.

As time passes, new data is collected, and the climate and other factors change, the man-

agement of the river may need to be adjusted accordingly through the AOP process. The environmental monitoring system that MRBA has supported will provide a clearer view of conditions along the river and reveal how specific projects are affecting the ecosystem.

MRBA also learned from the Corps modeling that should water depletions grow in the basin, so will the impacts of drought on water users. Therefore, an effort is being made to learn exactly where the water in the river is going and for what purposes it is being used. "MRBA is committed to finding out what the current level of depletions in the system is, and to developing some kind of equitable approach to address future depletions.

That may well mean some adjustments to the plan in the future," Opper said.

During the recent negotiations, MRBA's goal has been to ensure that the effects of a drought would be fairly distributed throughout the basin. The MRBA and others who helped compile the recommendations expressed a belief that the document represented the best compromise that could be achieved. By reaching this historic agreement, the citizens, states, and tribes of the basin have strengthened their ability to work together to meet the needs of a wide variety of people and to improve the environment, as well.

MRBA submits Master Manual recommendations

Last November, the Missouri River Basin Association submitted to the U.S. Army Corps of Engineers its recommendations for changing the Master Manual. The following letter was sent to General Carl A. Strock of the Corps' Northwest Division.

Dear General Strock:

The Missouri River Basin Association (MRBA) thanks you and your staff for supporting MRBA's efforts to develop recommendations for the preferred alternative in the Revised Draft Environmental Impact Statement (RDEIS) the Corps will publish early next year. On behalf of MRBA, we are pleased to provide the following recommendations to assist in your decision.

The submission of these recommendations does not constitute a waiver of rights by any of the Missouri River Basin States or Tribes nor does it constitute a river basin compact or equitable apportionment

of the waters of the Missouri River Basin among the States. They are provided for the sole purpose of assisting the Corps of Engineers in making revisions to the Master Manual.

Although it has been difficult to balance the competing uses of the river system, MRBA believes our recommended changes to the management of the Missouri River allow both economic and environmental interests to prosper. To develop these suggestions, all the basin interests have had to make some difficult decisions in the spirit of compromise and general well being of the entire basin.

MRBA will continue to encourage input from the basin's constituents throughout the Master Manual review and update process. The Association urges the Corps and technical staff from the basin states to continue to work together to minimize adverse operational impacts in the basin.

MRBA recognizes the concerns of the Missouri River Basin Indian Tribes and supports ongoing consultations on the impacts of changes to the existing Master Manual on tribal cultural and economic resources. In addition, one basin state, Missouri, cannot support some of the recommendations

in this letter. However, Missouri will continue to support the process and participate in the Missouri River Basin Association.

Flow Management Recommendations

Water Supply:

The existing Master Water Control Manual emphasizes the importance of operating the reservoir system to provide sufficient river flows in reaches between reservoirs and in the lower river to meet water supply needs. The Corps' preferred alternative must continue to meet these critical needs.

Navigation Support Guidelines:

The flow management recommendations provided below have been revised from the draft recommendations MRBA submitted in its August 31 letter to you. These revisions reflect concerns MRBA heard from various river users, particularly navigators, and additional follow-up modeling by the Corps. Although the revised flow recommendations fall short of meeting all the needs of all river uses, they represent our best effort based on current information to find an acceptable compromise.

MRBA believes the Corps should endeavor to keep Missouri River navigation viable during a drought like the one experienced in the 1980s by:

- 1) avoiding when possible consecutive years of minimum (7.5 feet of draft) service level flows, and
- 2) maintaining when possible a navigation season length of at least 7.1 months.

The MRBA also recognizes that droughts of greater intensity and duration have occurred (e.g. drought of the 1930's) and are likely to occur in the future. Further, we recognize that flow support for navigation would have to be sus-

pending at some point (navigation preclude value) to ensure there is adequate water reserved to meet the other authorized purposes during such an extended drought.

Using data provided by your staff, we believe the following set of water control plan guidelines would achieve the results we desire.

Navigation Service Level Check:

- 8 feet of draft (Full service minus 3,000 cfs)
- March 15 less than 54.5 MAF
- July 1 less than 59.0 MAF

Season Length Check:

- 7.1 Month Season
- July 1 less than 59.0 MAF

Severe Drought Year Service Level: (Severe drought defined as a year in which there is no gain in total system storage between March 15 and July 1)

- 7.5 feet of draft (full service minus 6,000 cfs) July 1 to August 20 of following year

Navigation Preclude:

- March 15 less than 31 MAF
- Current model runs using the guidelines listed above result in a minimum System Storage level of 43 MAF during a drought similar to that experienced in the 1980's.

Evacuation of Flood Control Zone:

MRBA supports the release of excess summer and fall storage to meet the needs of downstream uses. A flow target would be added at St. Charles, Missouri, to measure possible navigation impacts in the surrounding reaches. A maximum additional 5,000 cfs would be released from the Missouri River mainstem system if the St. Charles target indicates that navigation impacts will

occur. The releases shall be subject to the following constraints:

- Water shall not be drafted from the Carryover Multiple Use Zone.
- The releases shall occur after the end of the tern and plover nesting period.
- The releases shall stop at the conclusion of the Missouri River navigation season.
- Excess storage shall be released prior to ice-in.
- Downstream flood targets shall not be exceeded.

Given that the Corps has generally been in an evacuation mode since 1993, MRBA recommends that the Corps presents its flood storage evacuation guidelines in the RDEIS and discusses them during the public hearings that follow release of the document.

Water Depletions:

Changes to the current level of depletions of water from the Missouri River and its tributaries may have an impact on all mainstem project purposes. The MRBA Directors commit to exploring mechanisms to determine how to fairly share these impacts on project operations. The first step of this process is to establish baseline information on the current level of depletions. MRBA urges the basin's states, Indian tribes, the Corps, and other federal agencies to begin working on this task immediately.

Environmental Recommendations:

MRBA recognizes the need to recover the basin's threatened and endangered species and to prevent future listings of such species. The key to MRBA's environmental recommendations is the development of an adaptive management process to help recover the basin's threatened and endangered fish and wildlife populations.

MRBA recommends an approach to species recovery that includes the four components listed below:

1. Recovery Committee:

MRBA recognizes the need for the basin's states, Indian tribes, water users, and other interested parties to be involved in discussions among federal agencies concerning the recovery of the basin's threatened and endangered species. Other river basins facing similar issues have formed committees comprised of diverse representation from state water and fish and wildlife managers, tribal representatives, and environmental and economic interests to assist federal agencies on species recovery plans. MRBA recommends that the Corps, the U.S. Fish and Wildlife Service, and other federal agencies work with MRBA, state fish and wildlife agencies, and other water users and interests to form such a committee in the Missouri River basin. Recommendations of the committee would be subject to requirements of the National Environmental Policy Act prior to their implementation.

2. River Flows:

Unbalancing of the Upper Basin Reservoirs:

To provide benefits to sports fisheries, recreation, and endangered species in the upper three reservoirs, MRBA recommends that the Corps implement when possible, without compromising downstream flood control, an intra-system trading of stored water (unbalanced storage) among Ft. Peck, Sakakawea, and Oahe reservoirs. MRBA acknowledges the flood control concerns of downstream interests and encourages the Corps to avoid when possible increases in the use of the Exclusive Flood Control Pool, especially in Oahe Reservoir.

Lower River Habitat Improvement and Recreation Flows:

To evacuate excess water, river flows are often significantly above full service navigation targets. To enhance wildlife and recreation in the lower river, when practical and consistent with other project purposes, the Corps should reduce releases from August 1 to September 15 to full navigation service levels (41 kcfs at Kansas City).

Fort Peck Fish Enhancement Flows:

As part of the adaptive management program, the Missouri River Basin Association recommends trial fish enhancement flows from Fort Peck Reservoir. The enhanced flows will be coordinated with the unbalancing of the upper basin reservoirs, and thus will occur approximately every third year. These higher flows will be designed to enhance the recovery of the pallid sturgeon and to provide habitat improvements for the least tern and piping plover. MRBA will also work closely with officials from the Fort Peck Indian Reservation to ensure the protection of the Tribes' cultural resources there. The enhanced flows will adhere to the following criteria:

- Flow Rates: 22,000 cfs
- Timing: Begin the first week in June
- Duration: Two weeks
- Frequency: Every third year, to coincide with scheduled low water year for Fort Peck Reservoir in the Corps' unbalancing of the upper basin reservoirs.

MRBA will work with state, tribal, federal, and local officials in the next few months to:

- develop appropriate flood and drought control restraints to impose on the proposed Fort Peck spring rise,
- estimate the cost of spilling water from the dam to increase

river temperatures below Fort Peck Reservoir, and

- develop a strategy to protect tribal cultural resources and various infrastructure developments below the dam.

The effect of the enhanced flow trials will be closely monitored through the Missouri River Environmental Assessment Program (MoREAP). See #4 below.

MRBA also recommends that all modifications to the existing flow patterns throughout the river system be implemented on a trial basis of approximately seven years. Throughout this period, extensive monitoring will determine the success of various approaches and the need to modify efforts to recover the basin's threatened and endangered species. In coordination with this experimental spring rise, winter releases will be modified as an adaptive management approach to minimize impacts during ice-up.

Gavins Point Releases:

MRBA recognizes the controversial nature of adjustments to releases from Gavins Point Dam. MRBA recommends that the Recovery Committee investigate the benefits and adverse impacts of flow adjustments to the existing uses of the river system.

3. Habitat Acquisition and Enhancement:

MRBA generally supports efforts to acquire land or easements from willing sellers as a means of enhancing fish and wildlife habitat in the basin. MRBA sees a need for continued funding of and coordination between programs that buy land or easements from willing sellers, compensation of counties and levee districts for lost taxes or fees, and enhancing the wildlife habitat value of those lands. The habitat acquisition and enhancement activi-

ties generally fall under the following programs:

The Fish and Wildlife Mitigation Project: This program was originally authorized under the Water Resources Development Act of 1986 (WRDA). MRBA recommends that this project be adequately funded (at least \$15 million per year) while keeping administrative costs to a minimum. The 1999 WRDA bill recently re-authorized the Mitigation Project and increased the acreage eligible for the program.

Sec. 514 of WRDA 1999: This companion piece of legislation that was also authorized in the WRDA 1999 will develop projects between the banks of the river and will allow Montana and the Dakotas to participate in habitat enhancement activities in the basin. MRBA supports this program.

The U.S. Fish and Wildlife Service Refuge System: The U.S. Fish and Wildlife Refuge System is a critical element in the recovery of the basin's endangered species, and MRBA recognizes its value and the need for its continued viability.

MRBA also recommends investigating opportunities to acquire and enhance off-channel habitat to support the basin's threatened and endangered species. Such a program might provide incentives to floodplain landowners willing to participate in fish and wildlife habitat enhancement. Other programs that help restore the basin's fish and wildlife habitat such as the Corps' 1135 Program also receive the enthusiastic support of MRBA.

4. Monitoring and Research:

MRBA recommends immediate funding and implementation of a basinwide biological and hydrologic monitoring and research program to improve overall river management

and enhance the basin's fish and wildlife habitat and species recovery. The main monitoring component is the Missouri River Environmental Assessment Program developed at MRBA's request by the Missouri River Natural Resources Committee. The MoREAP program should be administered by the USGS-BRD office in Columbia, Missouri.

A related research activity is the National Academy of Sciences study of the Missouri River. This study will take approximately two years and has been designed to determine the status of scientific understanding of the Missouri River. The study will identify areas where additional research of the river system is needed and it will be used as a tool to focus MoREAP's research and monitoring activities.

Tribal Recommendations:

MRBA supports the following activities and principles regarding the Missouri Basin Indian Tribes:

- Access by the Missouri Basin Indian Tribes to low cost hydro-power produced from the dams on the mainstem Missouri River.
- Funding and training to help the Tribes identify and protect their cultural resources.
- Adequate consultation with the Tribes on the Fort Peck Indian Reservation concerning the proposed spring rise from Fort Peck Dam.
- Inclusion in the Master Manual Revised Draft Environmental Impact Statement a narrative about tribal considerations.
- Continuing studies on the impacts of the selected new alternative on the Missouri Basin Indian Tribes, their respective

economies, and their cultural resources.

Other Recommendations:

MRBA refers the Corps and others to the Association's Missouri River Planning Recommendations document published in April 1998. The document includes a variety of ideas designed to improve the basin's overall economic and environmental conditions and was developed with input and support of constituents throughout the basin.

MRBA is currently refining those recommendations and working towards their implementation. This work will be the central focus of MRBA over the next several years, and we look forward to cooperating with the Corps, other federal agencies, and Congress in that endeavor.

MRBA also recommends exploring the development of a financial relief and/or incentive program for river interests impacted by operational changes brought on by extreme climatological conditions.

These constitute our recommendations for the preferred alternative that the Corps will publish in its RDEIS early next year. We encourage the Corps to proceed with its planned public review process following the release of its RDEIS. We recognize that there is still much work to be done before a new Master Water Control Manual for the Missouri River system is adopted, and we thank you for giving the states and Indian tribes this opportunity to develop and express our recommendations.

Sincerely,
Bud Clinch, President
Missouri River Basin Association

Corps releases Northwestern Division preferred alternative for Master Manual

On January 13 the U.S. Army Corps of Engineers released a fact sheet that summarized key points of the Northwestern Division preferred alternative for the Missouri River Master Water Control Manual (the Master Manual).

The full text of the Revised Draft Environmental Impact Statement (RDEIS) is scheduled for publication in April. A public comment period on the RDEIS will extend through the spring and summer of this year. This will include a series of workshops hosted by the Corps and formal hearings to allow people to submit oral or written testimony.

Previously, in the fall of 1998, the Corps also published a

different, preliminary RDEIS which was not required by law as part of the Master Manual revision. The Corps will adhere to the official process required by the National Environmental Policy Act (NEPA) with the release of its RDEIS this March.

The Master Manual—the document that dictates how the river system is to be handled—has been under review since 1989 as the Corps has attempted to determine the optimum way of managing the Missouri while protecting the basin's economy and natural resources. After its first proposed revisions to the Master Manual met with widespread controversy in 1994, the Corps asked the Missouri River Basin Association to help the

citizens of the basin reach consensus on what they would like to see incorporated into the Master Manual. As a result of that process, MRBA submitted a list of recommendations to the Corps last November.

Meanwhile, the Corps has continued to compile and analyze data, including hundreds of computer simulations, to determine how any changes to the Master Manual would affect the people and environment of the Missouri basin. The Northwestern Division preferred alternative is one result of those studies.

The text of the fact sheet on the Northwestern Division preferred alternative follows:

Fact Sheet

on the Revised Draft Environmental Impact Statement (RDEIS)

for the preferred alternative for the Missouri River Master Water Control Manual

Flood Control: The base of the annual flood control and multi-use zone will remain at 57.1 million acre feet (MAF). This is the target storage for the reservoir system on March 1 each year.

Navigation Support Triggers: These are the storage levels that trigger releases for navigation service flows and season length. Lower levels trigger reduced releases for navigation earlier in droughts. During a drought, navigation target flows will be reduced by 3,000 cubic feet per

second (cfs) if total system storage is less than 54.5 MAF on March 15. Target flows will be reduced by 3,000 cfs and the season shortened to 7.1 months if storage is less than 59 MAF on July 1. In a severe drought, target flows will be reduced by 6,000 cfs from July 1 to August 20 of the following year. A severe drought is defined as a year in which there is no gain in total storage between March 15 and July 1.

Minimum Storage: This establishes the minimum total storage in the reservoirs during droughts. The new minimum will be 43 MAF in a drought like the 1980s. The low point during that event was 40.9 MAF in January 1989.

Navigation Preclude: This is the minimum storage level on March 15 for navigation support that year. If total storage is less than 31 MAF, there will be no releases from the reservoirs to support navigation.

Flow Enhancement at Fort

Peck: This will be an increase in cold water flows from the powerhouse in May and June and a warm water release from the spillway from May through August. These flows are expected to benefit warm water river fish such as the endangered pallid sturgeon.

Flow Enhancement at Gavins

Point: The current schedule of flat releases will be maintained to

benefit nesting interior least terns and piping plover, two protected shorebird species.

Split Navigation Season: The preferred alternative does not include a split navigation season.

Intrasystem Unbalancing: This is a 3-year cycle of rotating variable water storage in the three largest reservoirs. This will encourage growth of vegetation around the shorelines to provide fish spawning habitat and hiding

places for young fish. Lake levels will drop 3 to 5 feet and not affect access.

Mississippi River Navigation

Target: This establishes a target flow of 90,000 cfs at St. Louis to benefit Mississippi River navigation during years of excess water in the Missouri River system. A maximum additional 5,000 cfs would be released.

Comparison of the Economic & Environmental Benefits of the Preferred Alternative
(% Change from the Current Water Control Plan)

<i>Economic Use/Environmental Resource</i>	<i>PA</i>	<i>Economic Use/Environmental Resource</i>	<i>PA</i>
Flood Control Economics	-1	Warm River Fish Temperature Habitat	-8
Missouri River Navigation Economics	-1	Warm River Fish Depth/Velocity Habitat	0
Hydropower Economics	1	Young-of-Year Fish Production	2
Water Supply economics	0	Tern and Plover Island Habitat	43
Recreation Economics	4	Wetland Habitat	1
Total National Economics	0	Riparian Habitat	-2
Cold River Fish Temperature Habitat	2	Historic Properties Erosion Potential	-3
Cold Reservoir Fish Temperature Habitat	3	Mississippi River Navigation Economics	0

For more information

visit the Corps' Internet site: <http://www.nwd.usace.army.mil>

or contact: Cathy Boscardin, U.S. Army Corps of Engineers, Northwestern Division
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MRBA chooses new officers

The Missouri River Basin Association selected two new officers in January, and one of its federal representatives has been replaced.

Kevin Szcodronski (Iowa Department of Natural Resources) replaced Bud Clinch (Director of the Montana Department of Natural Resources) as president of MRBA.

Nettie Myers (Secretary of the South Dakota Department of Natural Resources) replaced David Pope (Chief Engineer of the Kansas Division of Water Resources) as vice president.

Richard Bad Moccasin (Mni Sose Tribal Water Rights Coalition) continues to serve as secretary of

MRBA, and Jeff Fassett (Wyoming State Engineer) continues in his position as treasurer.

In addition, the U.S. Fish and Wildlife Service has designated Michael Olson as its new Missouri River Coordinator to replace Mark Albers, who has accepted employment with American Rivers.

MRBA OFFICERS:

President: Kevin Szcodronski, Iowa Department of Natural Resources
Vice President: Nettie Myers, Secretary, South Dakota Department of Natural Resources
Secretary: Richard Bad Moccasin, Mni Sose Tribal Water Rights Coalition
Treasurer: Jeff Fassett, Wyoming State Engineer

OTHER STATE DIRECTORS:

Dave Sprynczynatyk, North Dakota State Engineer
Roger Patterson, Director, Nebraska Department of Water Resources
Steve Mahfood, Director, Missouri Department of Natural Resources
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Missouri River Basin Association

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